

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATIONS**

TREE/SHRUB ESTABLISHMENT

(Acre)
CODE 612

SELECTING SPECIES, SEED SOURCES AND PLANTING STOCK

- Use species adapted to the climate and soil, Consider the utility of the species to future markets, or to fit a particular need or use.
- Select species for the purposed intend and then seek sources of plant materials. Do not let plant availability be the main factor in species selection.
- Use native plants with the same provenance (similar genetic makeup) as local species. This is done by using seed collected from the planting area or by using seeds from commercial seed orchards that have similar provenance (reference Provisional Tree Seed Zones and Transfer Guidelines; for Alaska)

PLANNING- PLANTS

Order plants as soon as possible. Planting stock is often order in the season prior to planting.

Specify the dates that plants are to arrive on site for actual planting. Planting stock in transit to planting sites often break dormancy on route to the field.

Check with supplying nurseries in the fall before spring planting to confirm orders and delivery date.

One month prior to shipping coordinate the actual delivery date and estimated arrive times for the plant materials.

Inspect all plants at the time of arrival. Return all plants and containers that do not meet the

specifications desired or plants that have - broken bud (dormancy) - have mold or mildew on the plant roots or have damaged roots or are pot bound.

Stocking Density or Spacing

The following table provides minimum stocking as determined to meet the Alaska Division of Forestry Regulations needed for compliance with the Alaska Forest Resources and Practices Act.

Region 1 200 Seedling per acre with a 2 year survival of commercial tree species
Region 2 450 Seedling per acre with a 2 year survival of commercial tree species

Recommend minimum stock planting levels per species where no commercial thinning is desired.

Species	Spacing	Trees per acre
Cedar	9' x 9'	538
Hemlock Spruce	10' x 10'	436
Cottonwood	13' x 13'	258
Larch	12' x 12"	302

Recommend stocking level for an anticipated commercial thinning. (more productive site)

Species	Spacing	Trees per acre
Cedar	10' x 6'	725
Hemlock Spruce	8' x 6'	900

Conservation practice specifications are reviewed periodically, and updated if needed. To obtain the current version of this specification, contact the Natural Resources Conservation Service.

Cottonwood	10' x 10'	436
Larch	12' x 6'	605

STOCKING DENSITIES AND PLANTING

In order to decrease planting and site preparation cost plant spacing can be decreased to a minimum of 6 feet between plants within the row, not to exceed 15 feet between rows. This minimizes the amount of disturbed soil and herbicide use per acre in site preparation as well as decreases the travel time between plants for hand planters. For mechanical planting adjust spacing to accommodate planting intervals available on the equipment.

Planting and Seeding Method

Planting or seeding can be accomplished in a variety of methods. Typically they are either hand or mechanical in process.

Hand planting involves using an individual that walks the planting area digging holes with a planting implement such as a dibble bar or planting hoe. Implements such as shovels, tile spades, augers are also used.

Mechanical planting involves the use of a motorized power source that performs all or some of the action involved in tree planting. Digging the hole, placing the seedling, packing soil around the newly planted tree or shrub.

Regardless of the method used the following conditions are undesirable in planting.

- Tree roots will not be allowed to dry out in the planting process
- Plants will be planted as close to the natural position as possible. Root collars will be at the ground level, allowances for settling of the soil can be used. Trees planted too deep are just as likely to die as those planted too shallow
- Trees will be planted upright and roots will be point downward and even distributed in the planting hole or trench.
- Soil will be well packed around the seedling and will not have any air pockets next to the roots.

- Fertilizers can be used but will not be in direct contact with tree roots

Seedling Care and Storage

Planting Stock which is held for more than a few days after arrival should be cared for properly. Bare rootstock that has not begun to show any sign of breaking dormancy should be stored in a cold dark and damp environment. Roots should be moist when stored and watered slightly with cold water. Excessive watering will trigger a release from dormancy. Stock that is beginning to show bud break should be healed as described in the referenced fact sheet. Containerized stock should be treated the same except for the need for healing into the ground.

Planting Care and Handling

Planting stock roots should not be exposed to sun, wind for more than the time it takes to place the seedling in the soil. Exposed roots will be damaged within minutes of exposure to direct sunlight and desiccating winds. Root pruning is desirable when dealing with bare-root stock. The success of bare-root planting lies with the development of micro roots from existing roots. Root pruning allows for ease of planting, reduction of J-root, removal of damaged material and the introduction of diseases and increased micro root development. Root prune seedlings and transplants to the 75- 100% of the above ground height of the stock. For example a 16- inch transplant should have a root system that is 12 to 16 inches in size. When planting Balled and Burlapped stock consult with an arborist for proper post planting pruning.

Site Preparation

Avoid pre-digging of holes unless they are to be water prior to planting. This is usually only a consideration when planting B and B Stock. Avoid the use of manufactured or enhanced soils unless planting in urban situations. Replace soil in the order it was removed in order to maintain the original soil profile around the tree roots. When planting with a planting bar, avoid excessive soil compaction, which often leads to air pockets around tree roots when the soil is replaced or pushed up against the tree or shrub roots.

Post Planting Care

Provide for adequate and temporary support from wind throw when planting B & B stock. Monitor planting crews for quality control. Water highly valued stock to ensure survival where success is critical.

References

Forestry Handbook, 2nd Edition, Edited by Carl Wenger 1984 -

Alaska Forest Resources and Practices Regulation, 1993, Division of Forestry Department of Natural Resources

Provisional Tree Seed Zones and Transfer Guidelines for Alaska, John N. Alden, GTR PNW 270 May 191.

Technotes

How to Plant Transplant Trees,
USDA Forest Service Leaflet, Chugach National Forest

Care and Planting of Tree Seedlings
Forestry Fact Sheet, Division of Forest, Land and Water Management, State Forester's Office, 6/80

Job Sheets

Tree Planting Job Sheet. AK-for 1-99